

What is claimed is:

1. A micropipette for dispensing sequential, different sample solutions comprising:
 - at least one substrate;
 - at least one inlet port through which the sample solutions are delivered from the outside, formed in or on said at least one substrate;
 - at least one cavity into which the sample solutions are poured and which is filled sequentially with the sample solutions, each of said cavities having a plane passing through a center thereof when viewed in the depth direction, each of said cavities having a width of about 0.1 to 1 mm and a depth of about 0.1 to 0.5 mm;
 - an introduction hole between each said inlet port and each said cavity at a position at or below said plane;
 - an injection port for sequentially expelling the sample solutions formed in communication with each said cavity; and
 - a piezoelectric/electrostrictive element provided on at least one wall of said substrate adjacent each said cavity;

wherein the volume of each said cavity is changed by driving each respective said piezoelectric/electrostrictive element and a certain amount of each sample solution in said cavity is expelled from each respective said injection port, and

wherein the width and depth of each said cavity are selected to reduce mixing of the sequential sample solutions within each said cavity.
2. The micropipette according to claim 1, wherein said cavity has a length of about 1-5 mm.

3. The micropipette according to claim 1, wherein a plurality of said inlet ports, a plurality of said cavities, a plurality of said injection ports, a plurality of said introduction holes and a plurality of said piezoelectric/electrostrictive elements are formed in or on one substrate.
4. The micropipette according to claim 1, wherein one of said inlet ports, one of said cavities, one of said injection ports, one of said introduction holes and one of said piezoelectric/electrostrictive elements are formed in or on the substrate to provide a unit, and a plurality of said units are fixed to a fixing jig.
5. The micropipette according to claim 1, wherein said cavity, said piezoelectric/electrostrictive element and said introduction hole form one portion, said inlet port and said injection port are separately formed as another portion, and said two portions are joined to each other.
6. The micropipette according to claim 1, wherein at least one of said cavities, one of said piezoelectric/electrostrictive elements and one of said introduction holes are formed in or on the substrate to form a unit, and at least one unit is joined to a substrate in or on which at least one of said inlet ports or said injection ports is provided.
7. The micropipette according to claim 1, wherein the substrate comprises a flat plate and each said injection port is formed on a side face or a major surface of the substrate.
8. The micropipette according to claim 1, wherein the substrate comprises a flat plate, each said injection port is formed on one of opposing major surfaces of the substrate, and each said inlet port is formed on the other major surface of the substrate.

9. The micropipette according to claim 1, wherein at least two inlet ports are connected to each said cavity.

10. The micropipette according to claim 1, wherein a substrate in or on which at least one of said cavities and at least one of said piezoelectric/electrostrictive elements are formed comprises a zirconia ceramic material.

11. The micropipette according to claim 1, wherein the substrate comprises a zirconia ceramic material.

12. The micropipette according to claim 1, wherein a substrate in or on which at least one of said inlet ports and one of said injection ports are formed comprises at least one of a metal and a resin.

13. The micropipette according to claim 1, wherein each said piezoelectric/electrostrictive element includes a piezoelectric/electrostrictive film comprising a component consisting essentially of at least one member selected from the group consisting of lead zirconate, lead titanate, and lead magnesium niobate.